.S54
Copy 1

THE

PLANTER'S GUIDE

FOR

CULTIVATING AND CURING TOBACCO;

WITH

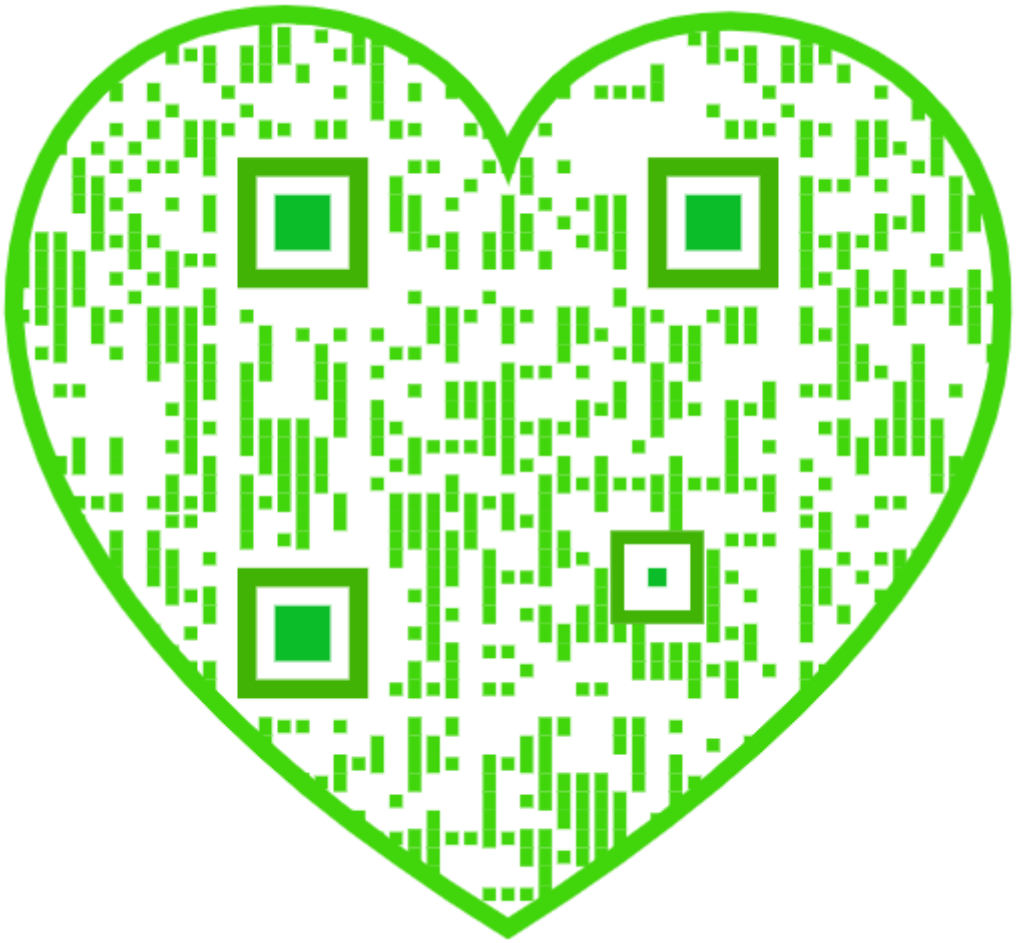
INFORMATION AND INSTRUCTIONS

CONCERNING THE

SHELTON TOBACCO-HANGER.

PREPARED BY THE SHELTON TOBACCO-CURING COMPANY OF ASHEVILLE, NORTH CAROLINA,
AND PUBLISHED BY THE DEPARTMENT OF AGRICULTURE OF THE UNITED STATES.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1876.



THE

PLANTER'S GUIDE

FOR

CULTIVATING AND CURING TOBACCO:

WITH

INFORMATION AND INSTRUCTIONS

CONCERNING THE

SHELTON TOBACCO-HANGER.

PREPARED BY THE SHELTON TOBACCO-CURING COMPANY OF ASHEVILLE, NORTH CAROLINA,
AND PUBLISHED BY THE DEPARTMENT OF AGRICULTURE OF THE UNITED STATES.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1876.

INTRODUCTION.

In view of the increasing production of tobacco, the Department of Agriculture has adopted the following guide for its cultivation and cure, as the best which has come to its notice, and publishes it for the benefit of agriculturists to whom the subject is new.

"Shelton's Tobacco-Hanger" seems to be a convenient mode for the first process of gathering and drying, but the description, as contained in the pamphlet, is obscure, and may be thus explained: The long, black lines are supported by forked sticks driven in the ground, and are but the frame-work which supports the sticks upon which the leaves of the tobacco are hung; and they may be of any desirable length, and two feet apart is a convenient position; the sticks and wire upon which the tobacco is hung are placed upon, and from one to the other of these, at convenient distances apart. Why there should be so many tables, as represented in the drawing, I do not readily perceive; but the operator will soon learn to adapt this to his own convenience.

Tobacco, after it is removed from the field, is either dried by artificial heat or exposure to the air under a roof; for while dews of the night, or even a shower of rain, after it is put upon the frame, are not decidedly injurious to it yet it is better that it should be cured without wet. This is a subject of which the pamphlet does not treat.

FREDK WATTS,
Commissioner.

Department of Agriculture, March, 1876.

THE PLANTER'S GUIDE FOR CULTIVATING AND CURING TOBACCO.

CULTIVATION OF TOBACCO.

The cultivation of tobacco in the United States has become so extensive as to embrace at least forty-two States and Territories, which produce an annual crop of about three hundred million pounds, with a value to the producers of at least forty million dollars.

Therefore it is a matter of great importance to the planter how to cultivate and prepare it for market in the best manner and at the least possible expense.

After making careful observations, we believe that tobacco, with skillful culture and management, is the most remunerative of any crop grown, and a poor business if grown and handled without the application of those principles and appliances which extensive experience has proved to be the best adapted to the end desired.

VARIETIES OF TOBACCO.

Loudon enumerates fourteen different species of tobacco, of which only one, the *Nicotiana Tabacum*, is generally cultivated. Of this species there are many varieties, each possessing qualities supposed to be derived from climate, soil, and modes of cultivation.

Few, if any, plants are so much affected by the peculiarities of the soil on which it is grown, by circumstances of fertilization and mode of curing, as tobacco. For example, the Broad-Leaf Orinoco, when cultivated on the rich and highly-manured lands of Kentucky, produces the dark, strong-flavored "shipping tobacco;" and when grown on the light gray soil of Virginia or North Carolina, with but little or no manure, and cured in a close barn with artificial heat, will produce the bright "wrappers" for which these States are so famous.

The variety known as Connecticut Seed-Leaf is grown principally in Massachusetts, Connecticut, New York, Pennsylvania, and Ohio, and is used in the manufacture of cigars, both for fillers and wrappers. Florida, portions of Ohio, Pennsylvania, and other States produce the Cuba, which is also used in the manufacture of cigars. Maryland, Virginia, North Carolina, Kentucky Ten

nessee, Missouri, and other States cultivate many varieties, prominent among which are the Big and Little Orinoco, (or Broad and Narrow Leaf Orinoco,) Big and Little Frederick, Blue and Yellow Pryor, Big Stem, White Stem, Gooch, and numerous other kinds that bear different names in different localities; and, though mostly hybrids, they each possess some good qualities which recommend them to the growers.

SEED.

Whatever the variety cultivated, it is very important that you have good seed for sowing. In order to secure this hereafter, a few of the earliest and most promising plants should be selected from the seed-bed, transplanted in some favorable spot, and carefully attended throughout the season. In time, these should be pruned of all except the large leaves, and only the two topmost branches left to bloom. These plants should be carefully suckered, and about the first of October every pod not thoroughly ripe plucked off and thrown away, and the others gathered and put in a dry place to cure. When dry, the seed should be rubbed out, sifted, and placed in a dry vessel, and kept where no dampness can reach them. Seed preserved in this manner will keep for years. By giving a little extra attention to your seed-plants, you can increase the yield and improve the quality of your tobacco.

SELECTION AND PREPARATION OF PLANT-BEDS.

In selecting a place for plant-beds, remember that you wish to obtain *early* and *vigorous* plants; therefore, take a rich, warm hillside, protected by timber or otherwise. Red lands are usually unsuited for this purpose. Never use wet or cold land. After finding a suitable place, select a dry time during the month of December or January, the sooner the better, rake off the leaves, lay down skids (about 3 inches in diameter) 3 feet apart, across which lay a bed of wood 5 or 6 feet wide, and high enough to burn for about an hour and a half, and yet leave a sufficient quantity to remove and kindle in another place.

After the fire has burned the length of time specified, move it the width of the first layer, then throw on brush, a good bed of wood, and continue as before. Every farmer ought to provide himself with iron hooks for pulling plant-bed fires. If it is possible to injure land by hard burning, we have never experienced it; and think that where one bed is injured by burning, ten are injured for the want of it. For every ten thousand plants required, there ought to be at least ten yards square of plant-bed. A bed of this size will supply more than the number mentioned, but it is much better to have some or your neighbor than to be under the necessity of begging plants.

After burning, the land should remain untouched a few weeks, that the rains

and frosts may assist in pulverizing the soil; then with a mattock dig up the bed without turning it over, and pulverize thoroughly with a hoe and rake. Remove all the roots, spread a light coating of stable-manure, chop it in, rake again, and the bed is ready for sowing. A large tablespoonful of seed to the ten yards square is enough to sow. This should be carefully mixed with sifted ashes, about half of it sown one way, and the other half by walking across the first sowing. By this the seed will be more regularly distributed. After seeding, the land should be rolled or trodden until it is smooth. Now is the time to manure. We consider horse-manure collected under cover (and free from litter or grass-seed) to be the best for this purpose. Chop it fine, and spread a coating (say half an inch or more) evenly over the bed. This should be the last manuring unless the spring is very dry, when a light top-dressing occasionally will be beneficial.

As to the use of guano on plant-beds, we are not prepared to recommend it as highly as stable-manure. We will add that, in the absence of this manure, a light dressing of plaster will be of service; but if you have good stable-manure, "let well enough alone;" for if these directions as to land and management are followed, there is about as much chance to fail in plants as to fail of going to sleep at night after a hard day's work burning land.

About three weeks after sowing, the bed should again be rolled or trodden, and covered with fine brush-twigs to prevent its drying up, and protect it from the frost. The brush should not be removed until the plants are large enough to nearly cover the ground.

There are few circumstances under which a plant-bed in the right locality, well burned and manured, should be watered. We are disposed to think that watering is useless unless the spring is very dry.

PREPARATION OF NEW LAND.

First take up every growth not too large to grub, and throw them into heaps. Then cut the small trees, the brush of which throw on the grub-heaps; then cut and remove the larger timber. After the ground has been cleaned off, it should be cultered at least three times; then harrow and rake it to pulverize the soil and remove the roots. It should now be laid off at a distance of three feet each way and hilled. The hilling is very important, as a plow in new land will not prepare it right, and "whatever is worth doing is worth doing well." The manuring of new land, though troublesome, pays well.

We would recommend it to be applied in the hill if the land is rough, as broadcast will waste much of it the first year. Thin ridge-land will produce a beautiful crop with a tablespoonful of guano to the hill. The second year it

may be manured as other land; for if the first year's work is well done, it will be prepared to receive manure broadcast. New land should be hilled at least three weeks before transplanting, and while the land is moist, so that the soi will become compact enough to retain moisture, that the plant may thrive without rain after being set out.

PREPARATION OF OLD LAND.

A gray, gravelly soil, with manure, will make a fine article of tobacco if the manure is properly applied.

On common corn-land, the application of two hundred pounds of Peruvian guano per acre (or other equally good fertilizer) applied broadcast, will insure a fine crop; but if the present crop is the object, it may be made with one-half this quantity applied in the hill.

We have succeeded well by the application of guano in drills. After the land has been thoroughly plowed, lay it off in rows three feet apart, and in these strew the fertilizer. Plow on each side of the rows (turning the furrows in) to cover the manure, and form continuous beds, which should afterward be nicely hilled. We think *all* upland should be hilled. About one hundred and twenty pounds of guano is enough per acre when drilled. Land for raising shipping tobacco should be more heavily manured; say for an acre six or eight cords of manure spread broadcast and plowed under, and in addition from two to four hundred pounds of some good fertilizer applied in drills. Ashes is a superior fertilizer for tobacco of any kind on any soil. In the Northern and Middle States, where lands are high and the seasons short, the growers of tobacco resort to a system of high manuring, for the purpose of forcing the plants to mature and increasing their production. With them it is quite common to apply ten or twelve cords of stable-manure, and, in addition to this, from two to five hundred pounds of guano, per acre.

TRANSPLANTING.

When the plants are four or five inches high in the beds, they are ready to be set out in the hills. As a rule, we prefer a medium-sized plant, because the larger the plant the more moisture and sustenance it requires; and the small plant is safer, but not so far advanced as the medium or larger one.

After giving that part of the bed from which you wish to remove plants a thorough soaking with water, for the purpose of softening the soil to prevent the breaking-off of the finer roots, remove the plants carefully, and wash or shake off all the plant-bed soil in order to give them a fresh, free start in the new soil. Take great care of them, and do not place so many together that

they will be crushed or bruised, nor keep them out of the ground until the tender roots dry up, but take them at once to the field, and drop one on each hill, to be followed immediately by the planter, who should take hold of it near the roots with the thumb and forefinger of the left hand, and with the right hand smooth down, or, in other words, straighten out, the roots. Then, with a peg about six inches long, make a hole in the center of the hill large enough to admit the roots without their touching on the sides; also make it deep enough to take in the longest roots without bending them.

Put in the plant carefully as deep as the bud; then, with the peg and thumb of the left hand, press the soil firmly to the roots, and draw the earth around the plant so as to fill the entire hole. The best time to transfer the plants from the bed to the hills is when the soil is moist, but not so wet as to cause it to bake around the roots and kill them, or prevent their getting an early start. If the season is very dry, before setting out take the dry earth from the tops of the hills, set the plants late in the day, giving them the benefit of the night dew, and before the dew has dried off in the morning cover them with straw, brush, leaves, or anything suitable.

This covering should remain until rain falls or until the plants get a good start. This we consider the best plan that can be adopted under these circumstances. We do not approve of watering, because it has a tendency to make the soil bake, as mentioned above: but when it becomes necessary, from a continued drought, after watering the hill, cover the spot with dry earth, and it will tend to prevent baking.

REPLANTING.

This should be attended to as soon as you are satisfied the plant is weak or has failed, because you should have as little difference in the growth of your plants as possible. By exercising proper care in the first planting, you will have but little replanting to do. We believe that cramped and crooked roots, air admitted to the roots by careless planting, and the bruising and crushing of plants by rough handling, are nearly, if not quite, all the causes of a poor "stand," providing the land has been properly prepared and is in good condition at the time of planting.

CUT-WORMS.

Soon after setting out the plants, look sharp for long black or brown worms, which burrow in the hills and destroy the plants. Unearth and kill them every morning as long as they can be found. They seldom trouble new land to any great extent. The best time and method we know of for destroying them is to plow up the land during the winter and *freeze them.*

CULTIVATION OF NEW LAND.

The main secret is to keep it clean and well stirred. In new land, this may be done by two good workings in the proper time, though a third working will often be very beneficial. If the land is freshly hilled, about two weeks after planting the hills should be scraped down, and a little fresh earth drawn around each plant. About three weeks after this, it should be hilled up, and in ordinary cases this will be sufficient, except to keep down the sprouts that may put up. Tobacco ought not to be worked after topping, as it will bruise and break the leaves. Plowing smooth new land once (at the last working) is of service; but if it is rough and stumpy, keep a plow out of it altogether.

CULTIVATION OF OLD LAND.

Old land requires more work than new. As soon as the plants get sufficient hold, narrow up your cultivator, so as not to disturb the roots, and go through it once for the first hoeing. Then cut up the remaining grass and weeds with a hoe, and level the soil around the plants, stirring it slightly. In ten days or a fortnight, go over it again with a plow or cultivator, twice in a row, using a short singletree, to avoid injuring the plants. This time you can stir the ground more freely around the plants, and should hill them slightly in hoeing, being careful not to cover any of the leaves. After this, it is better to perform all the work with hand labor, in order to save the plants from injury. Stir the ground with a hoe as often as necessary to keep down the weeds.

WORMING.

If the worms are numerous, the plants should be thoroughly examined at least twice a week. Destroy not only the worms, but all the eggs that can be found; or, what is still better, seek out and destroy the flies which deposit these eggs. These flies are gray in color, with yellow spots on each side of the body, and may be found about sunset flitting about the weeds and flowers, extracting their juices by means of their peculiar tongue, which is four or five inches in length. The Jamestown weed, or "Jimson" weed, as it is commonly called, which bears a white, bell-shaped blossom, is very attractive to these flies. Many of them may be destroyed by dropping a little of the following mixture into these blossoms: *One ounce of cobalt, dissolved in one pint of water and sweetened with some kind of syrup.* But this is equally as fatal to the blossoms as to the flies; therefore we give you the following instructions for making an artificial substitute, which will prove to be more durable than the natural flower, and quite as effective. The ladies can best perform this work, as they happily possess more taste and skill in such matters.

Procure for their use a quire of white paper and a bottle of mucilage. Then make a small block of suitable size and shape, on which to form the cone, and furnish them with a natural flower to imitate. If you have no blossom of the Jamestown weed, let them try their powers of imitation in making a "morning-glory." After forming the cone, clip it around the rim and curl slightly, to make it look as much like a flower as possible. Attach them to branches or brushes, and place them in your thickest growth of tobacco. They should be supplied with a few drops of the poison every evening, and it may be necessary to replace the flowers after a heavy rain. By following the above instructions, you will save much trouble in worming. A flock of turkeys will also be found very useful in catching and destroying worms, and can only be equaled by children to whom premiums have been offered.

TOPPING.

This operation consists in taking off the top of the plant, and must be done for the purpose of concentrating the strength of the land in such number of leaves as will best mature.

It should be performed as soon as the seed-buds show themselves.

No rule can be given which will apply to all cases, as much depends on the variety grown, the condition of the soil, and whether your crop is well advanced or otherwise. With an early crop on rich soil, do not take off more than one or two of the top leaves, if any at all; while, on the contrary, if your soil is poor and crop late, top down to that number of leaves which, according to your judgment, will fully ripen. The number of leaves to be left on the plant varies, in different sections and under different circumstances, from *eight* to *twenty*.

PRIMING.

This consists in removing the lower leaves of the plant to the height of five or six inches from the ground: these are removed for two reasons: first, if allowed to remain, they will be made worthless by coming in contact with the soil; second, to improve the quality of the remaining leaves, as in topping. Do not commence priming until the principal part of your topping is done; then continue it regularly, and save every leaf with as much care as if it were gold. Though light in weight, you will get some as fine tobacco from these primings as any in your crop, and it is simply folly to throw them away.

SUCKERING.

The suckers are small leaves that start from the base of the larger ones after the plant has been topped. They make their appearance at the top first, and

should be continually nipped off as fast as they become large enough to get hold of; otherwise they will retard the growth and prevent the early maturing of the plant.

REMARKS.

We have described the operations of worming, topping, priming, and suckering, separately and in the regular order in which they first appear; but they cannot be wholly performed and finally disposed of in the same manner.

Soon after you commence worming, the buds make their appearance and claim their share of your attention; then follow the priming and suckering. The first suckers will appear in about a week after topping, and will afterward require plucking two or three times in the same number of weeks.

The worming must still be attended to. Thus it will be seen that two or more of these are continued operations and can be performed in connection with each other. To the experienced tobacco-grower, much that we have written in the way of explanation may seem altogether needless; but our intention is to embody, in this pamphlet, all the practical information needed by new beginners, together with valuable hints to *all* tobacco-growers.

CONSTRUCTING BARNS.

SIZE OF BARNS.

For coal or flue curing, we believe in small barns, as the heat can be more evenly distributed in them. The old barns (16 x 16 inside) used in the old process will answer the purpose; though if the barn is to be built, we recommend it to be not more than four tiers high, placing the lower tier-poles eight feet from the ground, and the height between the tiers about the average length of the leaves you grow. Small farmers might build even smaller ones, say of that size which the force they work can fill in one or two days, calculating the hangers five inches apart, and a "hand" to fill one hundred hangers per day.

MATERIALS.

Logs, well "chinked" and "daubed" with clay, inside and out, are probably the best materials for walls; but in localities where they cannot be readily procured, any construction which can be made to hold the heat will answer. "Adobe," or bricks dried in the sun, (made of clay and a small quantity of straw mixed to prevent them from cracking,) will make a good wall. For tier-poles, use either straight poles or sawed lumber 2 x 4; arrange them to extend from back to front, and do this while building the walls, if made of

logs or adobe. The roof can be made of any material which will retain the heat. The doorway should be in the middle of the wall, (six feet high and four feet wide,) and to extend to the ground or floor; furnish it with a good close shutter or door.

FLUES.

In the construction of flues, stone of any kind that will not burst or crumble when exposed to the heat, brick or sheet-iron covered with mortar, cement, or clay, to receive and deliver a steady heat, are the principal materials used.

As applied to a tobacco-barn, they usually consist of two furnaces built inside, (near the right and left front corners as you enter,) with the ends projecting through the walls far enough to allow the feed-doors to open from the outside. Connected with these, on the inside, are funnels or passages, sixteen or eighteen inches in diameter, which extend around three sides of the barn, (about two feet from the walls,) and serve to distribute the heat evenly, and convey the smoke to the chimney or outlet. This chimney, or stem, as commonly arranged, is situated at the center of the rear wall, where the pipes or flues meet and join it.

Extend the chimney through the wall, and far enough beyond to prevent all danger from sparks. In order to insure a good draught, the chimney should be about four inches higher than the mouth of the furnace. There are patent flues in use which have given very good satisfaction, and we advise those who intend curing with flues to examine them before building the common flue.

HOUSES FOR AIR-CURING.

The drying-house should be so constructed as to allow the free circulation of air among the leaves, and protect them, when necessary, from the direct action of the sun, wind, and rain. Any building will answer the purpose which has a good roof, and windows and air-holes enough to regulate the circulation.

In erecting a building especially for this purpose, place a ventilator on the roof, and board the sides of the house perpendicularly, hanging every other board on hinges.

The inside should be divided by poles or timbers into "rooms," to accommodate the length of your sticks, and also into tiers, one above the other, about two feet apart, more or less, according to the length of the leaves grown.

Before proceeding to the gathering and curing of the crop, we call your attention to the Tobacco-Hanger.

TOBACCO-HANGER.

[Patented April 6, 1875.]

By Samuel C. Shelton.

This device is especially adapted to curing the leaves by gathering from the stalk, when fully ripe, and stringing them on the wire-attachment, thereby avoiding the splitting, cutting, transporting, and curing of the stalk.

Every experienced tobacco-grower realizes more fully each year that he is handling at heavy expense, and material injury to the leaf, a stalk entirely worthless as a commodity; and, while readily admitting the fact, he has still continued to follow the old and universal plan of curing, for want of something better.

We now present a device by which he can cure the gathered leaves alone, and let the stalk remain in the field to enrich the land.

We will enumerate some of the advantages gained by its use:

First. Economy of room. By putting a larger quantity on a hanger and an increased number of hangers in a barn, you are enabled to cure at least four times the usual quantity in the same barn.

Second. It takes less time and less heat to cure this four times as much than one house full by the old process.

Third. It takes less time to gather and prepare it for market.

Fourth. In curing, it saves at least three-fourths of the coal or fuel, and as much in time.

Fifth. It saves all the trouble of stripping after it is cured and one-half the trouble in assorting.

Sixth. It enables you to employ cheap labor in gathering, thereby saving nearly one-half the usual expense.

Seventh. It saves the tearing and bruising of the leaves, and useless weight consequent upon the presence of the stalk.

Eighth. It allows you to save the leaves as they ripen, and let the green ones remain to mature.

Ninth. It saves *every leaf* in the crop, and leaves no waste or rubbish.

Tenth. There is much less danger of injury from "running," on account of the absence of the stalk.

Eleventh. It improves the quality and *increases the weight* by preventing the sap from forcing the oil, gum, or other valuable properties of the leaf back into the stalk.

Twelfth. It enables the planter to cure his tobacco *thoroughly*, and greatly improves the color and texture.

By the use of this hanger in air-curing, all of these advantages are gained, except the saving of fuel; and for this claim we substitute one of vast importance to all who cure their tobacco in this manner, which is, the avoidance of "pole-sweat," or *rotting* of the stem and leaf while curing.

PREPARATIONS FOR CURING ON THE SHELTON HANGER.

This device is made either by attaching wire to the sticks now in use, or to others made for the purpose.

Cut the wire the length of the stick, and attach it at the center, either by giving it one turn around the stick, or passing it through a hole made with a brad-awl, and giving it two or three twists, leaving the wire parallel with the stick, with the ends in opposite directions. The wire may be attached to any part of the stick, though we recommend attaching it at the center.

SCAFFOLD.

When ready to commence "priming," or gathering your crop, erect a scaffold near the barn, on which to hang the tobacco after it is strung. This may be constructed of poles, scantling, or other material, and supported by forked sticks or horses. These poles should be the same distance apart as those in the barn. A barn 16 x 16, with four "rooms," six full tiers and a roof tier, will contain one thousand hangers filled with tobacco. A scaffold may be built to hold this number or less, as the tobacco can be removed to the barn whenever the scaffold is full.

GATHERING THE CROP.

If the plant is fully ripe, remove all the leaves at once, keeping the stems together, and transport them to the scaffold with a sled, wagon, barrow, basket, or in any way most convenient.

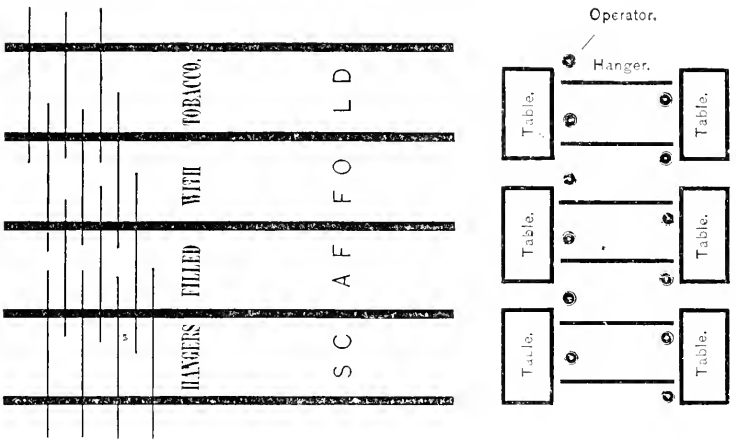
When a plant is only partially ripe, if you desire to make a fine, uniform crop, remove only the ripe leaves, leaving the others to mature.

When the leaves are about ripe, they present a spotted appearance and become brittle. By bending them short, they will break before doubling.

PREPARATIONS FOR STRINGING.

Support the hangers on two upright posts or sticks, having notches in the ends to keep the hangers in position. Place two hangers parallel with each

other, and two feet apart; then construct a table or bench, about four feet in length and two in width, near each end of the hangers. The following diagram illustrates the scaffold, hangers, tables, and position of operators:



STRINGING THE LEAVES.

As the leaves are brought from the field, place them on the tables with the stems, or butts, toward the operators; string them by passing the end of the wire through the stems; let the first leaf hang on one side of the stick, the second on the opposite side, and the third on the same side as the first.

Continue in this manner until the stick is full, allowing sufficient space at the ends to rest on the tier-poles.

We have strung and cured from one hundred and twenty to one hundred and thirty leaves on a single hanger; but would not recommend stringing more than one hundred average leaves on a four-foot hanger, as they will cure in less time and with less heat than a larger number.

Two persons can string on one hanger at the same time. As soon as a hanger is filled, place it on the scaffold, and proceed with another in the same manner. An ordinary "hand" will string one hundred hangers per day, while a more active person, with little experience, will string one hundred and twenty-five or upward.

CURING "GOLD LEAF."

The bright, lemon-colored tobacco used for fancy wrappers should be cured with charcoal or flues. The finest quality of this is raised in Virginia, North Carolina, and portions of Kentucky, Tennessee, and Missouri, and is cured in the following manner:

Fill the barn (placing the hangers about five inches apart) and hang your

thermometer on one of the lower tiers, near the center. Start your fires so as to produce a uniform heat of about ninety degrees, Fahrenheit, and continue this temperature until the tobacco becomes sufficiently yellow.

No exact time can be given for yellowing, as tobacco which contains a superabundance of sap, or is very large, requires more time than that which is smaller or has less sap.

An ordinary crop will require from twenty-four to thirty-six hours. Do not allow it to become *real bright yellow* before raising the heat, as it continues to yellow for several hours after.

Now raise the heat *three degrees per hour* until you arrive at a temperature of one hundred and ten degrees, and remain at this point until the ends of the leaves curl slightly; after which continue to advance at the same rate as before (*three degrees per hour*) until you arrive at one hundred and twenty. To prevent "sweating" during this time, the *safest* plan that can be adopted is to *keep the door open*. It is not necessary to keep it wide open, though there is no objection to its remaining so, except that it requires more fuel to secure the heat desired. At the beginning of the season, in curing the first tobacco in each barn, or in curing heavy or green tobacco, this plan should invariably be adopted, otherwise the dampness will endanger its injury from sweating.

Having arrived at one hundred and twenty, the door should now be closed; and, under favorable circumstances, may be closed at the start, but must be opened *often* while advancing from ninety-five to one hundred and ten degrees.

If sweating commences (which may be known by the leaves becoming damp and pliable) raise the heat and open the door, for the purpose of creating a current of hot air, which will soon cause it to disappear.

The *leaf* should now be cured before arriving at a temperature of one hundred and thirty; therefore advance only at the rate of *two degrees per hour* for the next five hours. Then, in curing the *stem*, raise the heat *five degrees per hour* until you arrive at a temperature of from one hundred and sixty-five to one hundred and seventy-five degrees. By this time the stems should be thoroughly cured; but if not, go no higher, but continue the heat, at the highest point reached, until they are.

We condense the instructions for regulating the heat in the form of a table for reference:

Remain at 90° until sufficiently yellow.					
Advance from	90°	to	120°,	3°	per hour.
" "	120°	"	130°,	2°	" "
" "	130°	"	165°, or 175.	5°	" "

Usually the leaves begin to curl at the ends by the time one hundred and ten is reached, which makes it unnecessary to stop at this point.

This table is simple, and as reliable as any that can be given. There are cases when crops are not in ordinary condition; then no table can be followed successfully. If you see the *face side* of the leaves turning a reddish-brown color, the heat must be increased a little; while, on the other hand, if they begin to show reddish *spots* near the edges and on *both sides*, you have too much heat. While advancing from one hundred and twenty to one hundred and thirty (in curing the leaf) care must be taken that you do not lower the temperature below the highest point reached. Never go above one hundred and eighty degrees, unless you desire to scorch your tobacco; which, some claim, improves the flavor, though it injures the color. In curing with charcoal, a barn 16 by 16 will require nine fires; one 18 by 18, twelve fires, and one 20 by 20, sixteen fires, so arranged as to distribute the heat evenly. If the wind should blow heavily against one side of the barn, raise the fires on that side a little above the others, and thus partially counteract its effect.

After curing, close the barn tightly in order to keep the tobacco dry.

CURING SHIPPING TOBACCO.

Let it remain in the barn or on the scaffold for three or four days, or until it begins to yellow; then make slow fires of logs, so arranged as to blaze but little. Care should be taken that the tobacco does not sweat from too much heat; but if it should, proceed as with bright wrappers.

"Houseburn" is *rot*, caused by heating the tobacco by overcrowding.

If it should heat before firing, start the fires at once. After the leaves are well dried, increase the heat until the stems are cured, providing you do not go above a temperature of one hundred and seventy-five degrees in so doing. The dark, heavy shipping tobacco is cured by firing immediately after it is housed.

SUN-CURING.

This requires an abundance of scaffolds and well-ventilated houses. The latter can be made of any desired length, but only as wide as will give free ventilation. The scaffold should be on the side giving most shelter from the winds, while it secures the full heat of the sun; and near the house, that the tobacco may be readily transferred from one to the other. The best results are obtained when the temperature is from sixty-five to seventy-five degrees, with a certain degree of moisture in the atmosphere. When the tobacco is in the scaffolds, protect it from the winds. If you have a very hot, dry day, which will cure it too rapidly to produce the desired color, close up the hangers on the scaffold, and it will have a tendency to "slow" the process. Four or five

days is enough on the scaffold; then put it into a *well-lighted* and well-ventilated house, where it should be kept and thoroughly cured by opening the doors and windows whenever the weather is favorable. After it is cured, close up the house and let the tobacco remain until you are ready to assort it.

AIR-CURING.

In air-curing, house your tobacco immediately after gathering; and during favorable weather, open your doors and ventilators that the air may circulate freely. It is necessary to exclude the rain and dampness, which materially damage the tobacco and injure its color. After it is nearly cured, do not give it full ventilation during the prevalence of high winds; a stove is very useful in preventing too much dampness, in case of continued wet weather.

SWEATING, OR FERMENTING.

Cigar tobacco is subjected to a process of fermentation called "sweating," which should be carefully conducted, for on this depends the color, and, in a large degree, the flavor of the tobacco. Place it in heaps about six feet in diameter, and cover them with blankets or anything that will press lightly and exclude the air. In about twenty-four hours, it will commence to ferment; and when it becomes so hot inside that the hand cannot well bear it, break up the heaps and repack, placing the heated tobacco on the outside, and again cover with cloths. Repeat until all the heat is gone, which generally takes from five to six weeks.

ASSORTING.

The variety of tobacco grown, and the market for which it is intended, must largely govern the planter during this operation. It should be performed when the leaves are moist enough to handle without being injured. The usual custom is to make but three grades, which are distinguished by different names, such as first, second, and third qualities, manufacturing, shipping, and lugs, or bright, medium, and dull.

These grades or qualities are principally composed of *ripe*, *overripe*, and *unripe* leaves at the time of gathering.

If you tie it in bundles or "hands," (which we believe to be work thrown away, besides injuring one of the best leaves in each bundle,) form them with from six to ten leaves each, of uniform length and color.

BULKING.

If your house has a ground-floor, either lay down boards or build raised platforms three or four feet in width, and construct perpendicular ends or bulk-heads, to keep the tobacco in position. Commence at one end, and after

straightening out the tobacco, lay a row on one side the full length of the platform, with the stems cut and evenly arranged. Then lay a row on the opposite side, allowing the ends of the leaves to lap over those of the first row about five inches, and so continue to pack closely. Place boards and weights on top of the bulk, *leaving the sides open.* This will keep the leaves moist, and at the same time allow the stems to become dry enough for packing. While in bulk, examine it occasionally, and if it should heat, or not dry sufficiently, overhaul and repack it loosely, without weighting the top.

PACKING.

When the large or heavy portion of the stem becomes dry enough to break easily, (with the leaf yet soft and pliable,) the tobacco is in proper condition for packing. If any portion of it is too soft or has an ill smell, it should be made sweet and dry by a few hours' sun.

If it has to be shipped a great distance, we would recommend packing in hogsheads, placing each layer across the one below it. Tobacco of fine quality should not be pressed too hard, as it will surely be injured thereby.

COMPARATIVE STATEMENTS.

In order to show more clearly the advantages gained by using the patent hanger, we make the following comparative statements of the two methods of gathering and curing; and though they only apply to one section of the country, as far as prices of labor and coal are concerned, yet the percentage saved will be nearly the same in all cases. Consequently, the *amount* saved will be greater in sections where labor and fuel are more expensive. A barn 16 by 16 will contain two thousand pounds of tobacco on the Shelton hangers, and can be cured with one hundred bushels of coal in two days or less, while to cure the same quantity on the stalk requires four barns, or four curings in one barn of three days each, which will consume at least one hundred bushels of coal at each curing, or four hundred bushels in all, and require the attention of a man for twelve days and nights.

COST OF GATHERING AND CURING ON SHELTON HANGER.

To gather and cure one barn, containing two thousand pounds after curing, requires—

Gathering.

3 men one day, @ 75 cents	$2 25
17 women and children, @ 40 cents	6 80

Curing.

1 man two days and nights, @ 75 cents each	$3 00
100 bushels charcoal, @ 5 cents	5 00
Total	17 05

CURING ON THE STALK.

To cure 2,000 pounds by the old process will require four barns, and the cost will be as follows:

Gathering.

24 men one day @ 75 cents, (to fill four barns)	$18 00

Curing.

4 men three days and nights @ 75 cents each	18 00
400 bushels charcoal, (100 at each barn,) @ 5 cents	20 00
Total	56 00
Cost of curing on patent hanger	17 05
Difference in cost of curing 2,000 pounds	38 95

By using the patent hanger you can save from *sixty-five to seventy per cent.* of the usual cost of gathering and curing your crop, besides increasing its value from *eight to ten per cent.*, by producing a more uniform color, improving the texture, and increasing the weight. There are other advantages to be derived from its use, all of which will become apparent to those who try it. For instance, the cost of hauling the green stalks from the field to the barn is wholly avoided. This is no small item, and, had it been included in the cost of gathering by the old process, would have made a still greater difference in favor of the hanger. However, we do not claim to save *all* the expense of gathering and curing a crop.

COAL AND AIR CURING.

Growers of tobacco in nearly all parts of the country (except New England) who have formerly practiced air-curing, are gradually adopting the quicker and more profitable method of curing in two or three days by artificial heat. By the latter mode of curing, tobacco is much improved in body, texture, and color. Even in the New England States we find that air-curing does not fully answer their requirements. At a recent meeting of the Connecticut Valley

Agricultural Institute, Professor Stockbridge, of Amherst College, in speaking of air-curing, said: "The curing process is defective; by the slow, gradual process, much of the essential narcotic oil is lost." He also referred to "a new system of curing, largely adopted in other States," and said: "This artificial curing retains all the virtue of the tobacco; in fact, increases its essential oils."

EXPERIMENT IN WEIGHT.

We now give you the actual result of an experiment made during the past season, for the express purpose of deciding this question: Does tobacco cured off the stalk lose or gain in weight?" Some contended that it would lose, others that it would gain; while a majority of those who expressed their opinion on the subject thought it would make no difference in the weight, whether cured on or off the stalk. Although convinced by the laws of nature that it must necessarily gain, we only claimed, previous to making this experiment, that it lost nothing. It is evident that each leaf, either in dying or drying, feeds back a large portion of its substance through the same channels that supplied it. The most casual observer of nature cannot have failed to notice this fact. The grass, the weeds, the corn, and every tree, shrub, or plant, asserts it in the most unmistakable manner. Tobacco cannot be exempt from this law of nature.

The fine or thin portions of the leaf are the first to cure; next the *small* and *large* fibers; and lastly the stem.

When cured on the stalk, the stalk is the last to cure, and much of that which is necessary to give the leaf "body" is forced back into the stalk, causing it to weigh more and the leaf less.

Again, in curing by artificial heat, the longer time tobacco is "fired," or subjected to heat, after the leaf is cured, the less it will weigh; therefore, in firing, the extra time required to cure the stalk, you are lessening the weight of the leaves. In making this test, two hundred average-size plants were selected, divided into two lots of one hundred each, and weighed. Lot No. 1 weighed 231 pounds 3 ounces; No. 2, 222 pounds 13 ounces. The leaves were stripped from lot No. 1, and cured on the Shelton hangers, and the stalks were cured separately. Lot No. 2 was cured on the stalks, with the following results:

CURED ON SHELTON HANGERS.

Weight of 100 plants before curing	231 lbs.	3 oz.
Weight of leaves and stalks after curing	38 lbs.	13 oz.
Shrinkage in curing	192 lbs.	6 oz.
Weight of stalks after curing	13 lbs.	6 oz.
Weight of leaves after curing	25 lbs.	7 oz.

CURED ON STALKS.

Weight of 100 plants before curing	222 lbs. 13 oz.
Weight of leaves and stalks after curing	37 lbs. 10 oz.
Shrinkage in curing	185 lbs. 3 oz.
Weight of stalks after curing	15 lbs. 5 oz.
Weight of leaves after curing	22 lbs. 5 oz.

Thus you will notice a difference of 3 pounds 2 ounces in favor of lot No. 1, cured on our patent hangers. In reply, you will naturally say that this lot weighed 8 pounds 6 ounces more than No. 2 before curing, which is very true; but we find, by dividing the weight of the green plants (231 pounds 3 ounces) by the number of pounds of cured leaves (25 pounds 7 ounces) that it required 9 pounds 1½ ounces of green plants to produce one pound of cured leaves; and shows that the difference in the two lots of green tobacco (8 pounds 6 ounces) was not sufficient to produce a pound of cured leaves; though, allowing it had been, there is yet a difference of 2 pounds 2 ounces in our favor, or a *gain of more than eight per cent. in weight* over the old method of curing.

Any farmer can easily make a similar test and satisfy himself as to the truth of this statement. In making an experiment of this kind, if you cure by artificial heat, and both lots in one barn at the same time, do not forget to remove that on the hangers after it is cured, instead of allowing it to remain while the stalks of the other lot are curing.

LIBRARY OF CONGRESS
0 000 915 025 0